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14. ABSTRACT

This is a case study of the South Texas Veterans Health Care System's Communication Center located at the Kerrville Division in Kerrville, Texas. This project discusses missed, scheduled appointments and their impact on clinic waiting times, as well as the development of the Communication Center at Kerrville Division as a solution to reduce appointment no-shows. Through the evaluation of nine clinics over three periods, it was determined that patients who were telephoned within 48 hours of their scheduled clinic appointment were more likely to make their appointments than were those who were not called. These results not only improved access to health care, but also positively affected customer service.

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Abstract

This is a case study of the South Texas Veterans Health Care System's Communication Center located at the Kerrville Division in Kerrville, Texas. This project discusses missed, scheduled appointments and their impact on clinic waiting times, as well as the development of the Communication Center at Kerrville Division as a solution to reduce appointment no-shows. Through the evaluation of nine clinics over three periods, it was determined that patients who were telephoned within 48 hours of their scheduled clinic appointment were more likely to make their appointments than were those who were not called. These results not only improved access to health care, but also positively affected customer service.

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Acronyms

DSS	Decision Support System
VA	Department of Veterans Affairs
VHA	Veterans Health Administration
VISN	Veteran Integrated Service Network
VSSC	VISN Support Service Center

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Introduction

Outpatient clinics rely heavily on scheduled appointments to make effective use of their resources and time. When patients do not arrive at their scheduled appointment time, there is a significant cost in terms of time lost as well as a substantial financial cost. Broken appointments cause disruptions in the normal clinic flow. This causes not only inefficiencies by wasting provider's time and clinic resources, but also results in increased waiting times for the patient. With current regulatory requirements calling for improved access to health care services, many hospital and clinic administrators are reviewing no-show rates in conjunction with missed-opportunity[1] rates, as these rates are substantial detriments to their access performance measures. Higher no-show rates result in extended waiting times, and that there are several workable solutions to improve performance; automated scheduling systems, patient education programs, and/or telephoning patients prior to scheduled appointment (Almog, Devries, Borrelli, & Kopycha-Kedrierawshi, 2003).

The South Texas Veterans Health Care System (STVHCS; System) has established a Communication Center from which personal telephone patients 48 hours prior to any scheduled appointment. The goal is to provide timely access to health care for eligible veterans in an efficient, effective, and equitable manner by decreasing wasted physician time with the reduction of no-shows and missed opportunities.

[1] The Missed-Opportunity Rate is patient no-shows plus appointments cancelled by clinic/patient rates.

Purpose

The purpose of this case study is to evaluate how the STVHCS Communication Center has affected the no-show rates and missed-opportunity rates in nine clinics throughout the STVHCS.

Overview of the STVHCS

The STVHCS provides comprehensive health care services to eligible veterans through a large integrated system. It is comprised of three major divisions referred to as the Audie L. Murphy Division in San Antonio, TX; the Kerrville Division in Kerrville, TX; and the Satellite Clinic Division. The latter consists of the Frank M. Tejada Outpatient Clinic in San Antonio, TX; the McAllen Outpatient Clinic in McAllen, TX; the Corpus Christi Outpatient Clinic in Corpus Christi, TX; the Victoria Outpatient Clinic in Victoria, TX, the Laredo Outpatient Clinic in Laredo, TX; the North Central Federal Clinic in San Antonio, TX; and a newly constructed South Texas VA Health Care Center in Harlingen, TX. In addition, outpatient care is also provided at seven community-based outpatient clinics in Alice, Beeville, Brownsville, Kingsville, New Braunfels, San Antonio, and Uvalde, TX. The System has one of the largest primary service areas in the nation with a catchment area that spans 63 counties (over 72,000 square miles) where there is a veteran population of approximately 365,000, of which STVHCS serves 85,000 each year (STVHCS January 2008 Trip Pack). It also makes up a third of the Heart of Texas Veterans Integrated Service Network (VISN 17), the headquarters of which is located in Grand Prairie, TX.

The Audie L Murphy Division of the STVHCS consists of 337 authorized beds, including 111 medicine beds, 56 surgical beds, 50 psychiatric beds, 30 spinal cord injury

beds, and 90 long-term care beds. Services offered to veterans include acute medical, surgical, psychiatric, geriatric, primary care services, and limited emergency care. The Kerrville Division consists of 174 authorized beds, including 20 acute care beds and 154 transitional care beds. Services offered include acute medical, primary care, some specialty care, geriatric evaluation and management, palliative care, long-term care services, and urgent care (STVHCS January 2008 Trip Pack).

Background

During the past several years, VA hospitals have faced growing challenges in the efficient management of capacity and patient flow. These challenges have grown more acute with the return of the many veterans who served in the recent conflicts in Iraq and Afghanistan. In addition, a larger number of veterans from earlier eras are turning to the VA for at least a portion of their health care (Tiron, 2008). Servicemen and women have returned from Operation Enduring Freedom/Operation Iraqi Freedom and have sought medical care in Department of Defense facilities and as they transition over into the VA system, the burden of efficient resource utilization increases (An Achievable Vision: Report of the Department of Defense Task Force on Mental Health, 2007). In order to maximize resources, utilization management of every service is essential. This includes the management of available appointments when patients desire access. This is an on-going process that needs constant attention.

One of the primary missions of the STVHCS is to provide timely access to care. A significant barrier to achieving that is patient no-shows. Patients' failure to attend scheduled appointments places an undue strain on the systems' providing services.

The Department of Veterans Affairs estimates that the Veterans Health Administration (VHA) is now treating over 5 million veterans each year (Healthcare System for Veterans: An Interim Report, 2007). Of these 5 million veterans, the STVHCS treats over 80,000 in its catchment area (Decision Support System). Although this is only 22 % of the total veteran population in the STVHCS catchment area, the numbers are growing daily (STVHCS January 2008 Trip Pack).

The STVHCS continues to expand accessibility while increasing the number of veterans it serves, to include returning OEF/OIF veterans. The number of veterans served is increasing at a steady pace, especially in the Lower Rio Grande Valley. The multiple facilities of the STVHCS provide health care for over 300,000 U.S. veterans residing in South Texas and Mexico (STVHCS January 2008 Trip Pack), where socioeconomic conditions vary greatly. The STVHCS strives to meet the health care needs of those who are eligible for benefits, from the relatively affluent population in San Antonio and Kerrville areas to the more economically disadvantaged of the Rio Grande Valley.

The Veterans' Health Care Eligibility Reform Act of 1996, Public Law 104-262, was enacted to equip the Department of Veterans Affairs with ways to provide veterans with medically needed care in a more equitable and cost-effective manner. (Government Accountability Office, Progress and Challenges in Providing Care to Veterans) The Eligibility Reform Act mandated the VHA establish and implement a national enrollment system to manage the delivery of health care services to its eligible veterans. The aim was to shift the focus of care from an inpatient to an outpatient setting, to improve access to ambulatory care, and provide more care to more veterans (Liu, Maciejewski & Sales, 2005) this has greatly increased the enrollees and patients in VHA. On May 8, 2006 the

VHA Directive 2006-028: Process for Ensuring Timely Access to Outpatient Clinical Care stated that new patients wanting routine care (that is non-emergent and non-urgent) and specialty care will receive appointments within 30 days. One of the ways the VHA is handling this mandate is by implementing the principles of advanced clinical access[2] in all of its clinics to assist in balancing supply and demand. This will standardize scheduling processes for meeting workload demands.

VHA Directive 2006-005, External Business Partner Connection Approval Process, states that one of the VHA's goals is to have no waits or delays in making patient appointments. In addition, the VHA takes the process one step further and tries to create appointments that meet the patient's needs in order to provide quality care when the veteran wants and needs it. In March 2000, VHA Memo 10-2000-01 created a performance measure workgroup that consisted of key executive leadership in each VA health care system. The goal was to develop a measurement system that reflected the VHA's priorities and to evaluate the VHA performance in relation to health care value (the highest quality at a reasonable cost). One of the measurement priorities is appointment no-shows, which are used to compare scheduling rules. This is a priority because it is costly each time a patient does not show up for an appointment.

In fiscal year 2005, the STVHCS incurred over $2.8 million dollars in no-show costs associated with nine clinics (2005 Expenditure per Stop Code Report). At that time, the practice of calling patients ahead of a scheduled appointment was fragmented and inconsistent. The System lacked consistency with regard to who was calling patients prior

[2] Advanced clinical access is a concept that is based on seven elements are considered essential to a successful advanced clinical assess program: 1) balancing supply and demand, 2) reducing backlog, 3) reducing the variety of appointment types, 4) developing contingency plans for unusual circumstances, 5) working to adjust demand profiles, 6) increasing the availability of bottleneck resources, and 7) having strong leadership investment and support (Planning Process for Advanced Clinical Access in Navy Military Treatment Facilities).

to appointment as a reminder; follow-up on unanswered calls; follow-up of no-shows; and mailing letters requesting demographic information for patients with invalid phone numbers. A proposal was approved in May 2007 to supply permanent staffing, furniture, equipment, and space for a Communication Center at the Kerrville Division to make telephone calls to patients scheduled for appointments in performance measure clinics. It was believed that the permanent staffing would bring continuity, appropriate coverage, and practices that would yield measurable improvement on missed opportunities.

The Problem

The VHA Directive 2006-005, External Business Partner Connection Approval Process, mandates that new patients be seen in clinics within 30 days or less and within 20 minutes of the stated appointment time. The personnel who schedule patients' appointments strive to coordinate multiple appointments on the same day, if possible. The immense geographical area of the STVHCS makes long distance travel a major problem for patients. Patients traveling from distant locations may find a clinic backed up and may have to change travel arrangements due to the wait times. In addition, patients pushed past the 30 days mandate may not have their needs appropriately addressed, and that may bring adverse consequences. No-show rates and missed-opportunity rates are evaluated daily because they may affect health care outcomes; and because they do adversely affect clinical productivity and create inefficiency in the delivery system, thus making it difficult to meet the performance measure of seeing new patients within 30 days and within 20 minutes of their appointment time.

Research Question

Does the additional step of calling patients before a scheduled clinic appointment have an impact on whether a patient shows up to a scheduled appointment?

Objective

The objective of this study is to determine if the implementation of the Communication Center made a favorable difference in lowering the no-show rates and missed-opportunity rates for nine clinics in STVHCS. Those clinics were: Audiology, Cardiology, Dermatology, Eye Care, Gastroenterology, Orthopedics, Podiatry, Primary Care, and Urology.

Importance

It is important to know if calling patients before their scheduled appointment reduces the no-show rates and missed-opportunity rates. If so, this will help to meet the STVHCS performance measure for seeing new patients within 30 days and within 20 minutes of scheduled appointment time. If variation is present, a further study will be required to determine the source of the variation.

Kerrville Division Communication Center

Performance within STVHCS is measured in six areas: access, technical quality, customer satisfaction, maximizing resources, building healthy communities, and employee of choice. The STVHCS 2008-2010 Strategic Plan defines these areas called "key drivers": *access* is ensuring STVHCS veterans have timely and appropriate access to health care; *technical quality* is providing world-class care to our veterans; *customer satisfaction* is ensuring the STVHCS patients and customers are treated with courtesy, dignity, and respect; *maximizing resources* is benefiting STVHCS veterans by applying

sound business principles and practices; *building healthy communities* is promoting healthy communities and improving emergency preparedness planning by collaborating with local and national partners; and *employer of choice* is promoting the recruiting and retention of the best and brightest employees throughout the STVHCS organization. Each of these key drivers has several goals, objectives, and planning initiatives.

As part of improving access to care, ongoing assessments are performed daily on the number of patients who do not keep appointments, including those patients who cancelled after the scheduled appointment time. To reduce these "missed opportunities," clerical and administrative staff throughout the organization began calling scheduled patients 48 hours in advance of their appointment to remind them and, if necessary, reschedule those who indicated they would not be able to make the appointment. Because time involved in making these calls took time away from other patient-focused duties and the concept of a centralized Communication Center was proposed, approved, and implemented at the Kerrville Division.

The initial staffing for the Communication Center was established at eight full time employees. However, it was quickly determined that more employees were needed to make calls for all the performance measure clinics for STVHCS. An additional nine full time employees were approved; and, at this time, the Communication Center is fully staffed at 17 – one lead, GS-5, patient services assistant and 16, GS-4, patient services assistants. The GS-4 patient service assistants work one of three shifts as shown below.

Table 1.

Communication Center Work Shifts

Number of Staff	Shifts	Time
Lead (GS-5)	Monday – Friday	8-4:30p
10 PSA (GS-4)	Monday – Friday	8-4:30p
3 PSA (GS-4)	Tuesday – Saturday	12-8:30p
3 PSA (GS-4)	Tuesday – Friday / Saturday	12-8:30p / 8-4p

The Communications Center was initially spread among three offices on the third floor at the Kerrville Division. Later, a large space was identified for the initial staff of eight and modular furniture was ordered. This first phase, with relocation to the single space with new furniture, was completed in June 2007. Then, an additional nine staff members were hired, which required additional space. Approval was sought and granted for the use of the original three offices on the 3rd floor until an adjacent room to the current Communication Center is redesigned. The room-redesign project and modular furniture installation are projected to be complete by the end of the first quarter of fiscal year 2009.

The Communication Center was initially provided a thin client[3] for each staff member. It was quickly learned that this would not be sufficient because of their limited storage space, and personal computers were recently installed for all staff. In August, 2007, staff began utilizing an electronic spreadsheet, which greatly improving efficiency and accuracy in capturing the workload. The information from this spreadsheet is available for access the following day in a shared folder. The Clinic administrative

[3] A thin client is a computer or software in a client-server architecture network which depends primarily on the central server for processing activities. It is used primarily to transfer input and output between the user and the remote server.

officers are able to review and analyze the posted daily data and are responsible for making improvements. By having this information readily available, the administrative officers can see the patient's appointment history and whether or not there is a trend (i.e., previous missed appointments in the same clinic or missed appointment due to another scheduled appointment at a clinic that was backlogged). Once such information is evaluated, an action plan can be created. For instance, if the Prosthetic's Department is constantly backlogged and is delaying patients from getting to their Vascular Clinic appointments on time, a plan to increase the flow through Prosthetics may be in order.

Between May 2007 and September 2007, 83,708 calls were made between October 2007 and November 2007, 68,078 calls were made and, as of April 25, 2008, personnel of the Communication Center had made a total of 321,240 calls. This includes both initial calls and the second calls to those numbers where contact was not made on the first call. An additional function for pre-registration[4], which requires each caller to ask for more information for enrollment purposes, was initiated April 1, 2008. Adding this pre-registration function to the daily workload of each personal service assistant resulted in 3,313 confirmed pre-registrations. This resulted in improvement in confirmed pre-registrations from 11% to 26.58% for STVHCS for the month of April 2008 (Communication Center May 2008 Report).

Each patient service assistant is monitored with an electronic phone activity report for the number of calls made and for the duration of the phone calls. The STVHCS Agent Activity Reports (May 2007 – February 2008) show that the average number of calls per patient service assistant each day is 136, and the average duration of each call is

[4] Pre-registration is the process of collecting patient's complete address, home and work telephone numbers, insurance information, next-of-kin, emergency contacts, and employer information.

1.19 minutes. The duration of calls increased, after the additional pre-registration function was added, to an average of 4.07 minutes (April 2008 – May 2008). This change reduced efficiency by more than 50% because with longer phone calls less people can be called during an 8-hour shift.

Depending upon the number of clinic appointments the patient service assistant must remind the patient of and certain characteristics of the patient reminders, each call may last between 1 and 3 minutes. Patients, who are hard of hearing, slow in speech, or who have other difficulties tend to take longer on the phone. Variations in the efficiency and effectiveness of each patient service assistant are reviewed by the Medical Administration Service Division Manager at Kerrville Division. Each caller's efficiency is measured by the number of calls made per day and effectiveness is measured by the type of contacts made (i.e., talked with patient, talked with care giver, left message on answering machine). In addition, the duration of each call is evaluated to determine the timeliness of each call.

An evaluation is being currently done on the additional function that was added to the personal service assistants workload in April 2008, and when completed will be forwarded to the Chief of Medical Administration Service for review. Based on the results to date, it is projected that additional staff will be required. If so, additional staff for the Communication Center will be requested in the fiscal year 2009 Business Plan. The Communications Center's timeline is also a part of the evaluation. See Table 2. Each change in the numbers of functions a patient service assistant is assigned affects the number of contacts made each shift. The additional assignments must be weighed against

the outcomes and whether the focus on reducing patient no-shows and missed-opportunities is still being met.

Table 2.

Communication Center Timeline

Date	Action
May 2007	The initial phone calls from the Communication Center began with the staff initially calling the performance measure clinics for Kerrville Division, Audie L. Murphy Division, Frank Tejada Out Patient Clinic, and South Bexar Out Patient Clinic, with the exception of Internal Medicine and Mental Health.
August 2007	Corpus Christi Out Patient Clinic workload was added.
December 2007	Workload for Victoria, McAllen, and Laredo was added in.
January 2008	Harlingen Out Patient Clinic was added, as well as the Saturday GI procedures.
March 2008	North Central Federal Clinic workload was added.
April 2008	Pre-registration function was added.

Statistics are gathered daily from the Communication Center Patient Log as shown in Table 4. The information is entered into an Excel spread sheet that aggregates the data. During the call, demographic information is requested to ensure the patient's demographic file is current in the VistA[5]. If the patient service assistant is unable to reach the veteran or a family member, he or she will leave a scripted voicemail message, if voicemail is available. For those appointments that are not confirmed with patient or a family member, a second call will be made one day prior to the appointment; then, the caller will leave a voicemail message if there is no response. Each time a call is made all phone numbers listed in the patient's account will be tried, unless a person is contacted or

[5] Veterans Health Information Systems and Technology Architecture (VistA®)

a voice mailbox is reached. The Communication Center Patient Log is a record of each patient service assistant's attempt in communication with the patient. This collection of data aids the patient service assistant with tracking the outcome of each call and whether or not an additional call needs to be made. Below is an example of the information collected in the Communication Center Patient Log.

Table 3.

Communication Center Patient Log

COMMUNICATION CENTER PATIENT LOG	Division	Stop Code	Clinic
Patient Name		Social Security Number	
Home Phone Number	Work Phone Number	Cell Phone Number	
Appointment Date		Appointment Time	
Contact		Comments	Time
Successful Contact w/Veteran	Yes / No		
Successful Contact w/Other	Yes / No		
Voicemail message	Yes / No		
No response	Yes / No		
Bad Information	Yes / No		
Call Back Date		Call Back Time	

Communication Center Procedure Plan

Many programs offer classes in public speaking, but few train staff to be good listeners. Veterans deserve to have their voices heard. The patient services assistants in the Communication Center are trained the Communication Center Procedure Plan, which shows the necessity of having empathy and courtesy in telephonic communication. They are instructed that each inquiry is unique and of significance to the patient. There are

times that a patient may be confused, irritated, or stressed, and the caller must remain calm and collect the information given in a courteous manner. The Communication Center Procedure Plan, set out below, contains instructions for the patient service assistants to follow during their phone conversations and is posted at each caller's desk as a reminder.

Table 4.

Communication Center Procedure Plan

Keys to enhance good listening skills	
Limit your own talking	You can't talk and listen at the same time
Think like the patient	His/Her problem and needs are important. You will understand and retain them better if you keep this point of view
Ask questions	If you do not understand something or feel you may have missed a point, clear it up.
Don't interrupt	A pause, even a long pause, doesn't always mean the patient is finished saying everything he/she wants to say.
Concentrate	Focus your mind on what the patient is saying. Practice shutting out distractions.
Take notes	This will help you remember important point, but be selective. Trying to note or jot down everything a patient says can result in being left behind or in retaining irrelevant information.
Listen for ideas not just words	You want to get the whole picture not just isolated bits and pieces.
Interjections	An occasional acknowledgement ("yes") shows the patient you are still with him/her, but be careful not to overdo or use meaningless comments.
Turn off your own words	This is not always easy but your personal fears, worries, and problems that are not connected with the patient's phone conversation, can form a kind of blockage that can distract you for what the patient is trying to convey.

Prepare in advance	Remarks and questions prepared in advance, when possible, can free your mind more for listening.
React to ideas not the person	Do not allow irritation at things a patient may say or his/her manners distract you.
Don't jump to conclusions	Avoid making unwarranted assumptions about what the patient is going to say or mentally trying to complete a patient's thoughts.
Listen for the overtones	You can learn a great deal about a patient by the way he/she says things and the way he/she reacts negatively or biasly.
Intolerance (Pitfall to good listening)	Beware of your own, as well a patient's prejudices. A particular speech pattern or accent may trigger a particular conscious or unconscious prejudice. Do not react negatively or biased.
Organization of a call	In handling phone inquiries, a technique of organizing a call can be helpful. If followed, you will find your phone inquiries are less difficult and less time consuming. There are six points of organizing a call: 1. Introduction 2. Listening 3. Directing a conversation 4. Checking references Explanation Closing
Directing the Conversation	Once you have obtained all the information needed to answer the question or concern, advise the patient of what action is needed or give and explanation. If the patient must be placed on hold, ask permission from the patient with a short explanation of why he/she must wait.
Closings	Assure the patient that the inquiry will be given the utmost attention if additional action must be taken.
Avoid these things when handling inquiries	1. Avoid the use of "in-house" or "slang" terms 2. Avoid using unidentifiable pronouns such as we, they, and them. 3. Avoid passing or placing blame. 4. Avoid condescending or sarcastic tones. 5. Avoid playing the transfer game.

Can I be fast and courteous?	When trying to be efficient and courteous, remember to use common skills of polite conversation. Always remember that we can't expect the caller handle conversations as professionally as we do. Part of our responsibility is to help them as quickly as possible without compromising courtesy and consideration.
How to handle an irate patient	Your instinctive reaction to someone who starts to "chew you out" is to get huffy yourself. That is the worst thing you can do. Generally, you must control your temper if you wish to control the situation. Keep your voice calm and matter of fact and you manner attentive and helpful.
Summary	To effectively handle inquiries and build the patient's confidence in our organization and our telephone representatives, we must integrate many factors. To summarize: 1. Present a positive image of yourself and the VHA. 2. Successfully use good listening techniques. 3. Organize the call to its utmost effectiveness. 4. Deliver explanations in a clear, courteous business-like manner.
Attitude is everything	True customer service professionals remain cool and collected in any situation and have a confident attitude. Patients feel comfortable giving you information when they are confident that they are dealing with a professional. A bad impression makes patients uncertain of your ability. Also, a bad impression or bad encounter lingers in the mind of the consumer and is difficult to change. In addition to your attitude, the following factors affect the impression you project to the customer. 1. Work Area: Keep your work area clean, neat and uncluttered. 2. Body Language/Facial Expressions: Use relaxed motions. Try to smile often and maintain a great deal of eye contact. 3. Voice: Speak in a pleasant tone. Your sound often says more than your actual words. People believe in the sound of your voice. Remember you "are" the facility. Your job is to create a positive encounter with your facility. Dissatisfied customers won't give your facility a second chance… they just won't come back!

Telephone tips	The tone of voice, rate of speech, and verbal inflections (smile) replace the face-to-face expressions. Voice inflections should transmit a positive, enthusiastic, and "willingness to help" attitude. Whether you are giving information, interpreting information or even handling an error, it is important to always present a positive image of you and the VHA.
Pitch	High-Low Speech. Experts say low is desirable because it projects and carries better. Also, it is more pleasant.
Inflection	Do not talk in a monotone voice; use feelings to express an idea or mood.
Courtesy	Common everyday courtesy applies if you are face-to-face with a person or on the telephone. It may be more important because you cannot see the person to whom you are speaking and therefore, you cannot convey body language or facial expressions.
Understandability	Avoid talking with anything in your mouth such as chewing gum, pencil, food or drink.
Rate	If you are speaking too rapidly, people start listening to how fast you are talking instead of what you are saying. To a person who is hard of hearing, this sounds like gibberish. If you speak too slowly, it can be irritating to a listener because he is hanging on to every word and tends to anticipate what you will say next.

Literature Review

There are several concerns with patient appointment no-show rates. Not only do appointment no-shows waste the time of physicians and staff, but they also cost money. One study shows "with an increasing emphasis on the value and efficiency in health care delivery, quality time between the physician and patient is an increasingly valuable resource" (Dugdale, Epstein & Pantilat, 1999). As administrative requirements increase and physicians face more demand on their time, they have less time to spend with patients (George & Rubin, 2002). Time is finite and cannot be replaced once gone. Scheduled appointments are fit into the physician's schedule, which is extremely limited.

Managed care limits the time a patient spends with a physician (Fetter & Thompson, 1966).

There may be several legitimate reasons why patients do not show up for their scheduled appointments. In 2004, Medical News reported that "interviews with patients revealed three reasons why 42 percent of appointments are not kept: first, the patient may feel anxiety or fear about the cause of the symptoms and anticipated diagnostic tests, second, a patient may feel disrespected by the health care system, and third, a patient may not understand the scheduling system." Another study gave the following reasons for scheduled appointment none attendance: forgot to attend or cancel (30%); no reason (26%); clerical errors (10%); felt better (8%); fearful of being seen by a junior doctor (3%); inpatient in another hospital (3%); miscellaneous other (20%) (Murdock, Rogers, Lindsay & Tham, 2002). This study by Murdock et al agrees with that of Lee and McCormack which showed nearly a third of those who missed appointments claimed simply to have forgotten them (2003). In addition, new patients are less likely to miss an appointment than are returning patients who are already known by the clinic personnel and who feel that their absence may be less inconvenient because of their familiarity with the clinic personnel (Glover, Gagnon, Flegal & Haney, 1983). Whatever the reason may be, appointment no-shows are a serious problem.

Although the VHA is striving to keep waiting times down, which means addressing the variables that increase waiting times, it is a difficult task. Kansas Congressman Dennis Moore reported that in recent years, the number of veterans seeking care at VA facilities has increased significantly, and funding increases for the VA have not kept pace. Between 1996 and 2001, the number of veterans receiving VA health care

increased by 45%, from 2.9 million to 4.2 million. The VA health care budget failed to keep pace with the enrollment increase over this 5-year period, growing by only 30% (Moore, 2002).

With increased utilization of the VHA, resolving excessive waiting times is a high priority and the implementation of processes to reduce appointment no-shows and missed-opportunities will assist in the VHA's overall performance by increasing the number of individuals seen in its clinics. There are several methods identified to reduce missed appointments: patient education, patient reminders, sanctions, open access, emphasis on continuity, and scheduling rules (Johnson, Mold, & Pontious, 2007). For best results, a combination of these methods should be used, but for facilities that may have limited resources and can only implement one method at a time, telephone reminders show a noticeable improvement on no-show rates (Hashim, Franks, & Fiscella, 2001).

Telephone reminders are a very effective method of increasing attendance to hospital-based clinics. This is true whether the reminder is delivered to the patient, to a family member, or even to telephone answering machine (O'Brian & Lazebnik, 1998). Although studies have shown variable results, most studies show improvements of up to 50% in the reduction of no-show rates (Hashim, Franks & Fiscella, 2001).

Data

The data for the study were collected as primary data from the Department of Veterans Affairs' Veterans Integrated Service Network Support Service Center (VSSC) from the Patient-Wait Times Report and Patient Missed-Opportunities Report. In addition, the staff in the Communication Center supplied detailed data concerning

responses to calls. The sample frame consists of nine clinics in the STVHCS: Audiology, Cardiology, Dermatology, Eye Care, Gastroenterology, Orthopedics, Podiatry, Primary Care, and Urology.

The survey was conducted in three stages. The aggregate no-show rates and missed-opportunity rates were categorized based on date. The first stage consists of data collected from January 2005 through November 2006. This stage represents a time frame when there was no requirement for a reminder call to be made to patients with next day appointments. The second stage consists of data collected from December 2006 through April 2007. In late November 30, 2006, an informal message went out to the clinic clerks that a telephone call might be a way to reduce the no-show rates. There was no mandated process, nor was there any consistency in the way patients were called. The third stage consists of data that were collected from May 2007 through February 2008. This stage represents a time when the Communication Center was formally in operation. Staff members had been hired to call individual patients and remind them of their next day, scheduled appointment.

The first stage was 23 months long with 207 observations. The second stage was 5 months long with 45 observations, and the third stage was 10 months long with 90 observations. The enclosed charts (Figures A1-A9) indicate each clinic no-show rate and missed-opportunity rate divided into the three stages. Each chart indicated a decline in no-show rates and missed-opportunity rates over time. Additional charts, (Figures B1-B9) show the average no-show rates and (Figures C1-C9) show the average missed-opportunity rates during the three individual stages. These charts indicate that every clinic evaluated showed a decline in no-show rates and missed-opportunity rates after the

introduction of call reminders went into effect. In addition, the difference between stage 2 and stage 3 indicated that the no-show rates and missed-opportunity rates continued to fall after a formal Communication Center was put into service.

Limitations

Limitations include the varying number of staff after the Communication Center opened in the Kerrville Division on May 1, 2007. The Communication Center initially started with four full-time equivalent employees, but over the next few months, additional employees were hired, bringing the total to 16. In addition, it is difficult to control for all of the variables (e.g., each additional task reduces the number of contacts made) that have added to the reduction in the Communication Center's effectiveness. There may be some variation in the no-show rate variable due to seasonal or cyclical causes. Finally, there was no business plan describing the purpose of the Communication Center.

Method

This case study is retrospective. The unit of analysis is nine clinics within the South Texas Veteran's Health Care System: Audiology, Cardiology, Dermatology, Eye Care, Gastroenterology, Orthopedics, Podiatry, Primary Care, and Urology. The variables used are no-show rates and missed-opportunity rates described in Figure 1 and evaluated in Microsoft Office Excel 2007.

The operational definitions are:

- ***No Show Rate*** = *% of All Completed No Show Appointments*
- ***Missed Opportunities Rate*** = *No Shows + Canceled by Clinic/Patient rates*
- ***Canceled by Clinic Rate*** = *% of all Completed Appointments Canceled by Clinic after Appointment Date/Time*
- ***Canceled by Patient Rate*** = *% of all Completed Appointments Canceled by Patient after Appointment Date/Time*

Figure 1. Operational Definitions of Variables

The variables were applied to three time frames: Jan 05 - Nov 06 (no call to remind patients for next day, scheduled appointments); Dec 06 – Apr 07 (intermittent call reminder by clinic clerks for next day scheduled appointments); and May 07 – Feb 08 (formal call to patients to remind them of their next day scheduled appointment).

Conceptual Model

The Starfield model divides the health services system into three components: structure, process, and outcome (Harlow, Starfield, Johansen, & Guyer, 1992). The structural components constitute the resources needed to provide services in a system; i.e., the Communication Center. Process components involve activities of the providers and activities of the recipients of care; i.e., calling patients to remind them of their scheduled appointments. The number of no-shows and number of missed-opportunities are affected by the process from the Communication Center. The final section that completes the model consists of outcome components of care; i.e., no-show rates and missed-opportunity rates. The affect on these rates should be improvement as the reminder-calls are made. The flow diagram of the Communication Center in Figure 3 illustrates how structural and process elements interact with the population and with the social and physical environment to effect no-show rates and missed-opportunity rates.

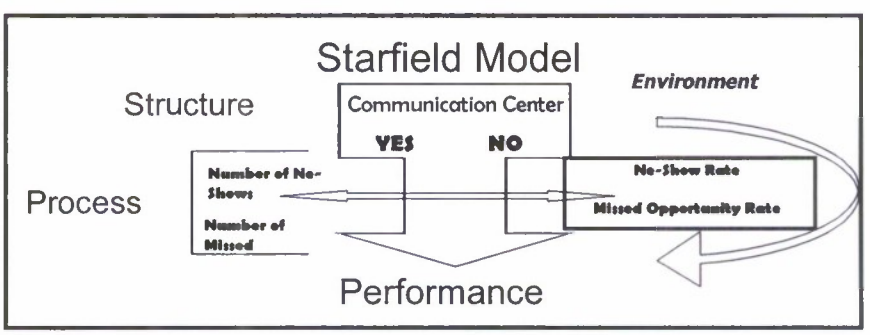

Figure 2. Starfield Model for STVHCS Communication Center

Results

The no-show rates and missed-opportunity rates were studied in nine STVHCS clinics: Audiology, Cardiology, Dermatology, Eye Care, Gastroenterology, Orthopedics, Podiatry, Primary Care, and Urology. There were a total of 342 observations during 38 months from January 2005 – February 2008. Clinic no-show rates and missed opportunities are shown in Appendix A; clinic average no-show rates are shown in Appendix B; and clinic average missed-opportunity rates are shown in Appendix C.

In each clinic evaluated, a decline in no-show rates and missed-opportunity rates was noted with each stage. See Table 1. The Audiology Clinic showed an overall no-show rate decline of 59.28% and an overall missed-opportunity rate decline of 43.02%; the Cardiology Clinic showed an overall no-show rate decline of 48% and an overall no-missed-opportunity rate decline of 39.08%; the Dermatology Clinic showed an overall no-show rate decline of 29.27% and an overall missed-opportunity rate decline of 16.35%; the Eye Care Clinic showed an overall no-show rate decline of 29.27% and an overall missed-opportunity rate decline of 16.77%; the Gastroenterology Clinic showed an overall no-show rate decline of 24.35% and an overall missed-opportunity rate decline of 19.32%; the Orthopedic Clinic showed an overall no-show rate decline of 33.96% and an overall missed-opportunity rate decline of 23.15%; the Podiatry Clinic showed an overall no-show rate decline of 47.33% and an overall missed-opportunity rate decline of 29.94%; the Primary Care Clinics showed an overall no-show rate decline of 34.77% and an overall missed-opportunity rate decline of 30.67%; and the Urology Clinic showed an overall no-show rate decline of 35.75% and an overall missed-opportunity rates decline

of 21.61%. The average no-show rate for all clinics showed a decline of 36.72% and missed-opportunity rate decline of 25.71%. See Table 5, which follows.

Descriptive Statistics from Excel

Table 5.

Clinics Average No-Show Rates and Missed-Opportunity Rate Table

Clinic Name	Average No-Show Rate	Average No-Show Rate	Average No-Show Rate	Average Missed-Opportunity Rate	Average Missed-Opportunity Rate	Average Missed-Opportunity Rate	Overall No-Show Rate Decline	Overall Missed-Opportunity Rate Decline
Audiology Clinic	9.28%	4.76%	3.78%	12.90%	11.17%	7.35%	59.28%	43.02%
Cardiology Clinic	16.94%	9.82%	8.81%	22.60%	19.13%	13.77%	48.00%	39.08%
Dermatology Clinic	18.18%	14.98%	12.86%	21.54%	21.42%	18.01%	29.27%	16.35%
Eye Care Clinic	14.49%	11.18%	10.25%	18.58%	18.23%	15.47%	29.27%	16.77%
Gastroenterology Clinic	19.62%	16.58%	14.84%	26.04%	24.74%	21.01%	24.35%	19.32%
Orthopedic Clinic	14.14%	10.76%	9.34%	17.29%	16.11%	13.29%	33.96%	23.15%
Podiatry Clinic	15.64%	9.74%	8.24%	18.91%	17.86%	13.24%	47.33%	29.94%
Primary Care Clinics	10.38%	7.66%	6.77%	15.74%	14.77%	10.91%	34.77%	30.67%
Urology Clinic	21.68%	16.44%	13.93%	25.57%	24.12%	20.05%	35.75%	21.61%
Overall No-Show Rate and Missed-Opportunity Rate Average	15.60%	11.32%	9.87%	19.91%	18.62%	14.79%	36.72%	25.71%

Conclusion

This case study is consistent with the published findings on no-shows. Through the evaluation in nine clinics over three periods of time, it was determined that telephoning patients within 48 hours of their scheduled clinic appointment decreased the no-show rate and missed-opportunity rate significantly. It is possible that the results are due not only to telephone calls, but also to the empathetic, courteous, trained personnel in

the Communication Center. The personal touch of a person reaching out to the patients may have not only reduced the no-show rate and missed-opportunity rate, but also may have aided in the customer service arena by causing patients to feel that they are valued by the VA. This study did not cover the actual reasons for STVHCS patients missing their appointments; a further study is warranted to determine those reasons.

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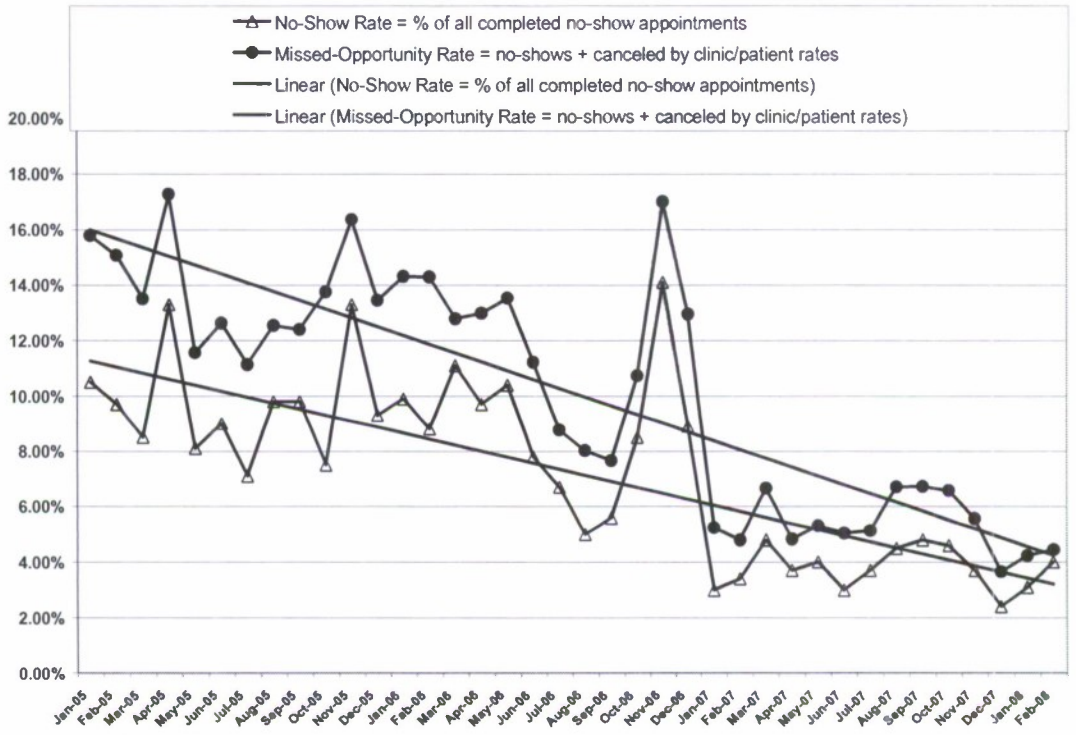
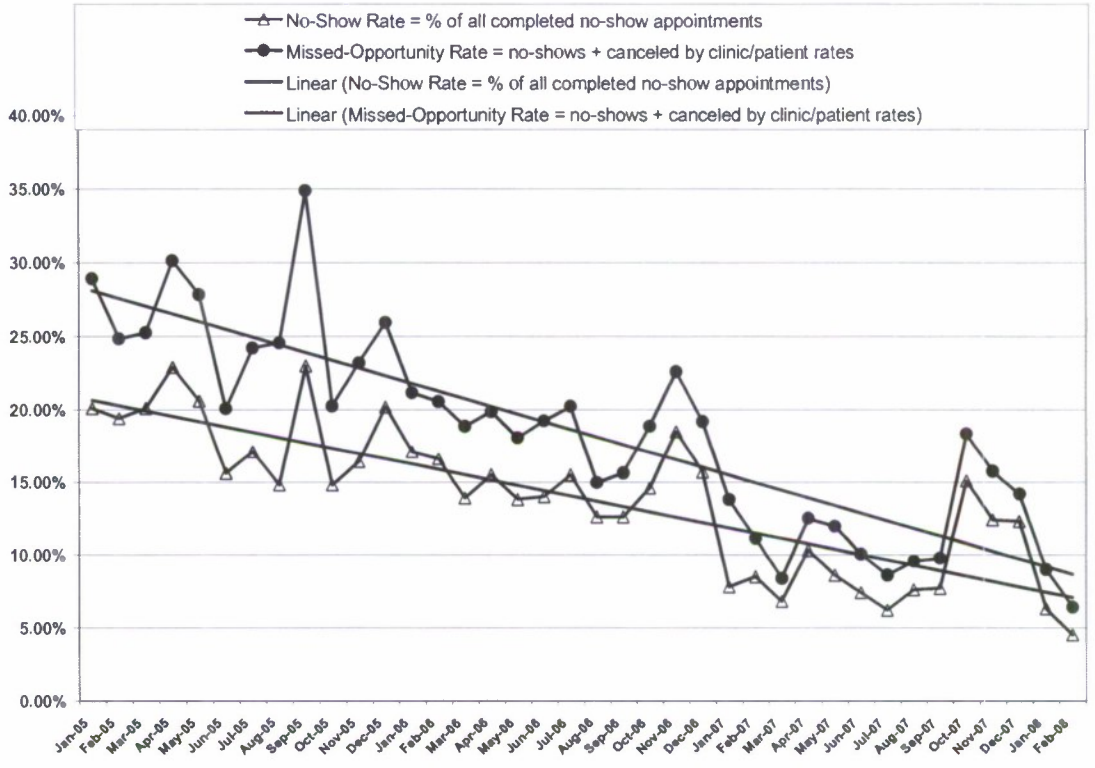
Appendix A: Clinic No-Show Rates and Missed-Opportunity Rate



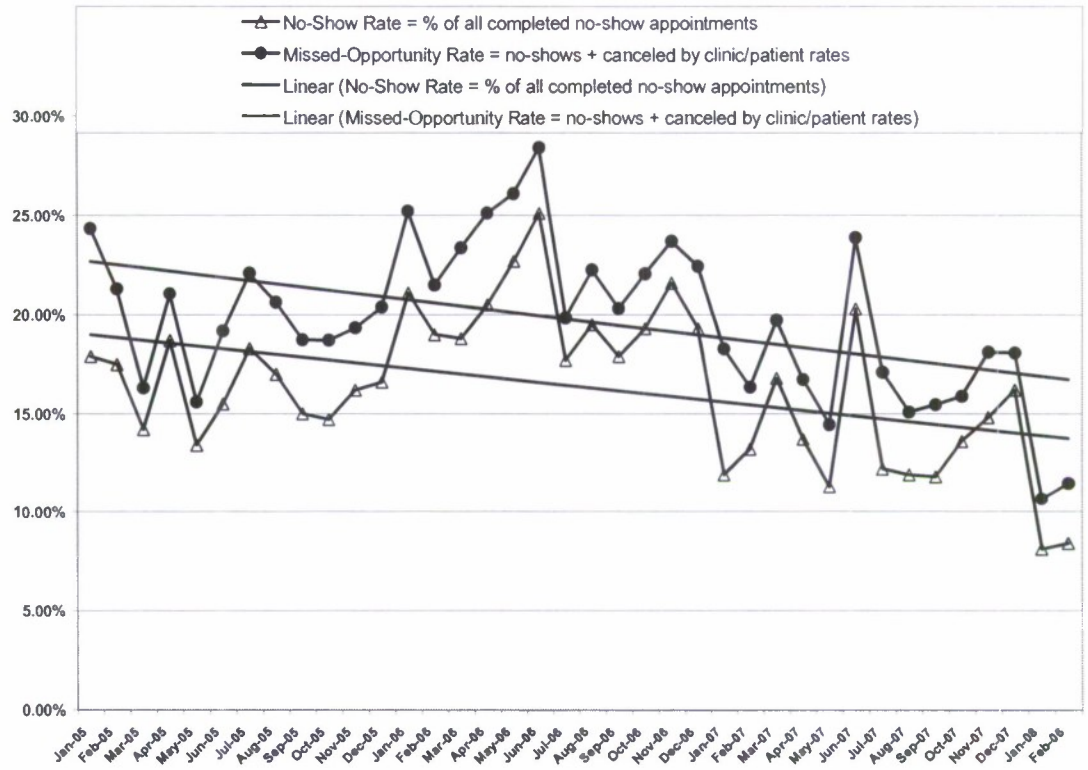
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A1. Audiology Clinic No-Show Rate and Missed-Opportunity Rate



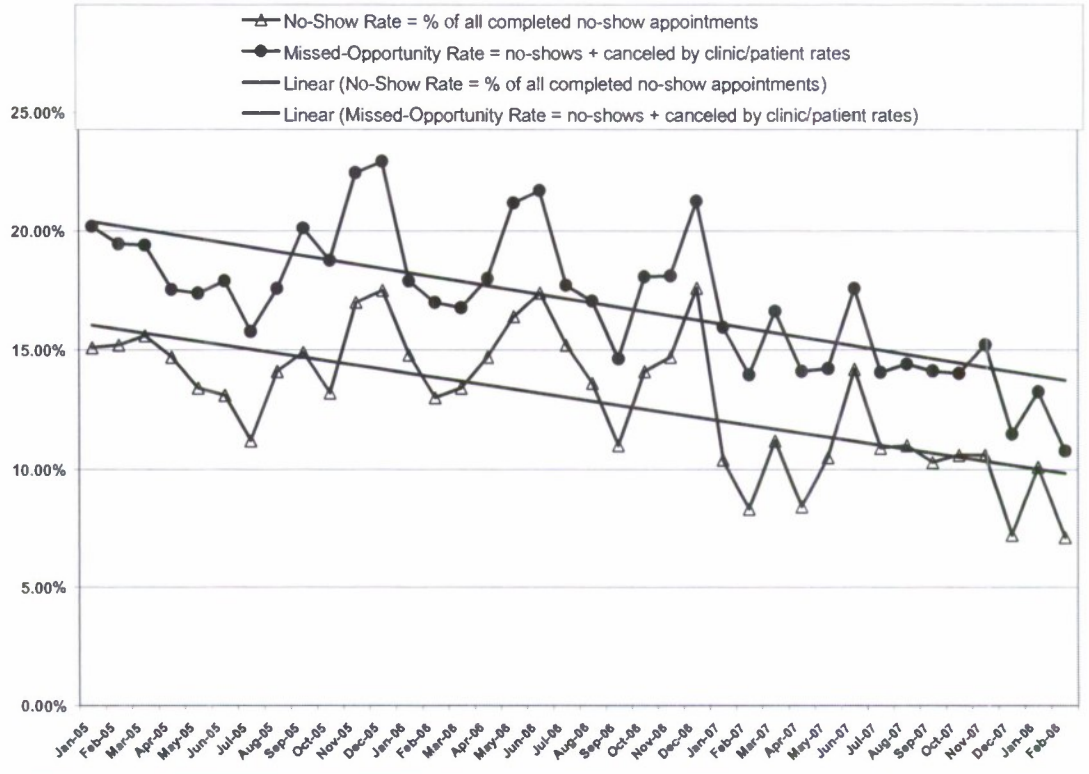
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A2. Cardiology Clinic No-Show Rate and Missed-Opportunity Rate



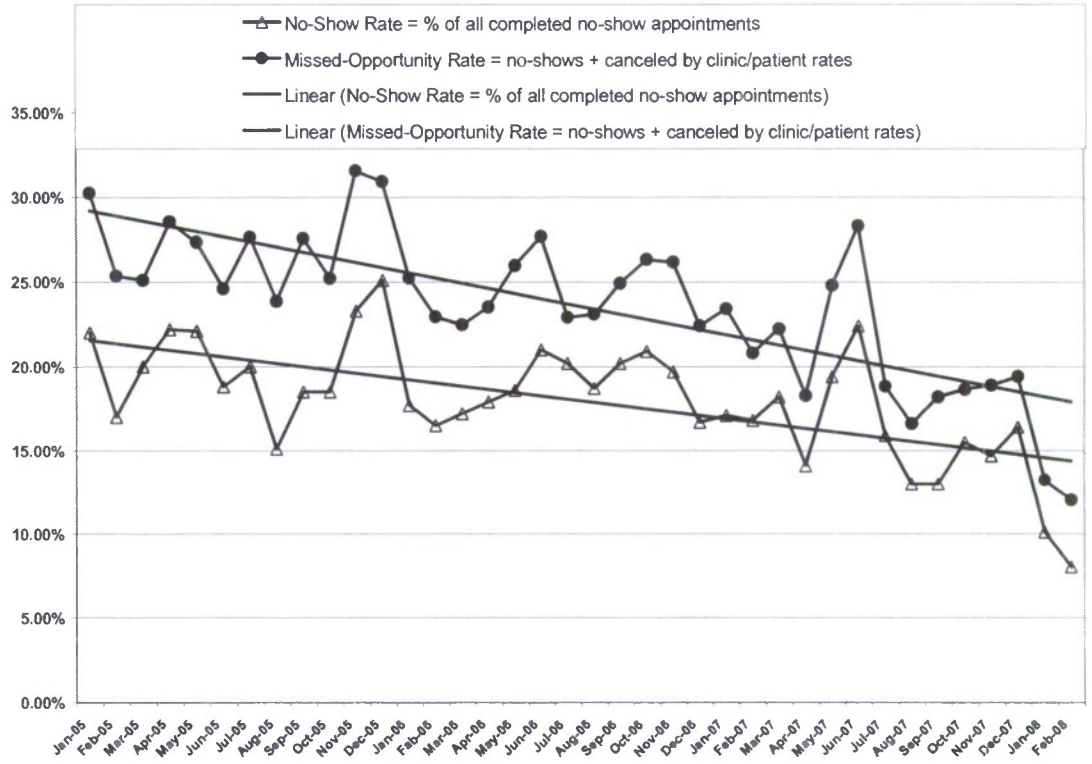
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A3. Dermatology Clinic No-Show Rate and Missed-Opportunity Rate



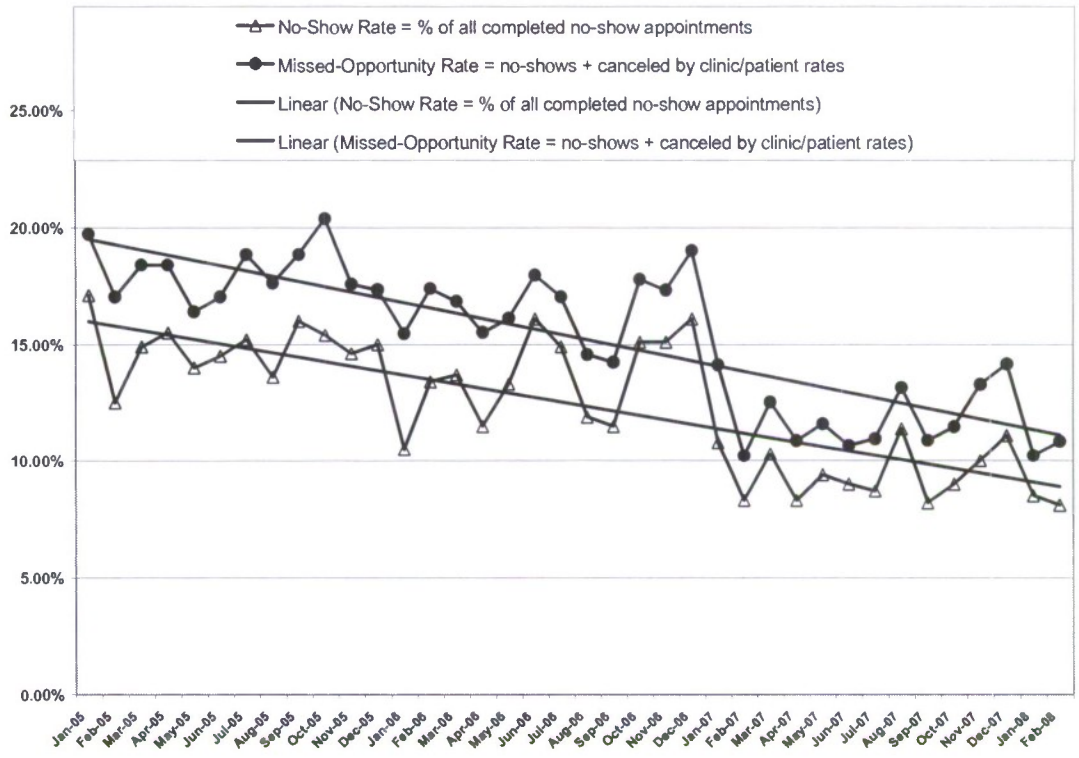
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A4. Eye Care Clinic No-Show Rate and Missed-Opportunity Rate



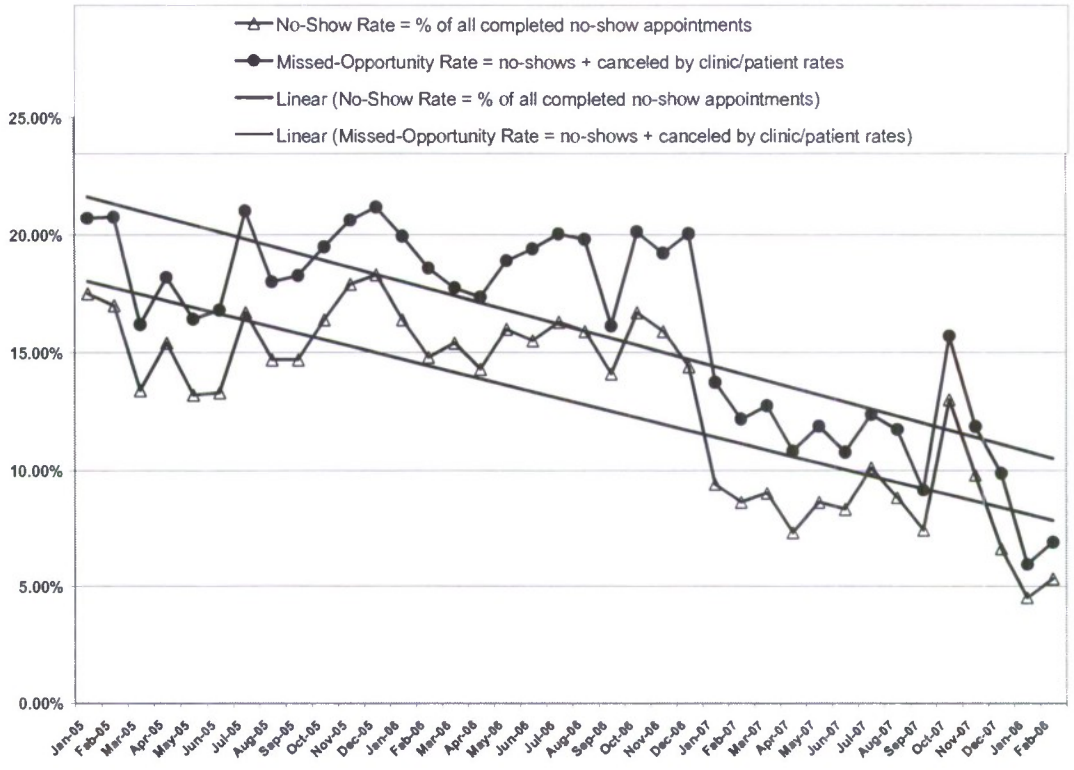
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A5. Gastroenterology Clinic No-Show Rate and Missed-Opportunity Rate



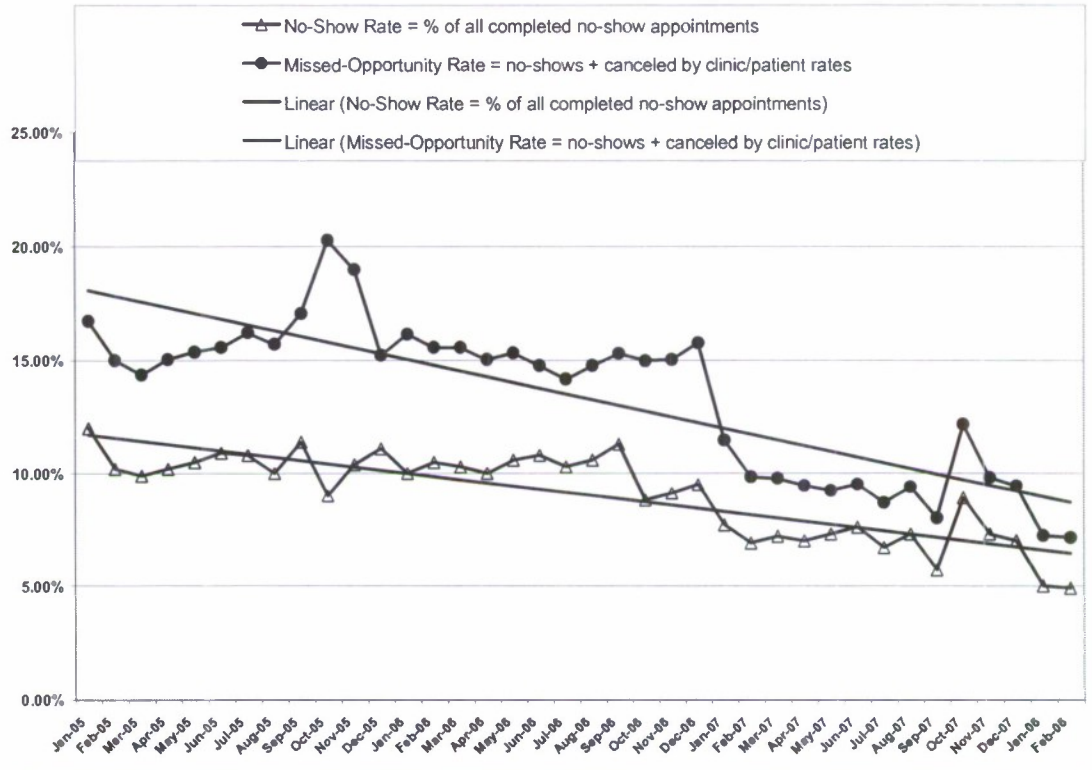
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A6. Orthopedic Clinic No-Show Rate and Missed-Opportunity Rate



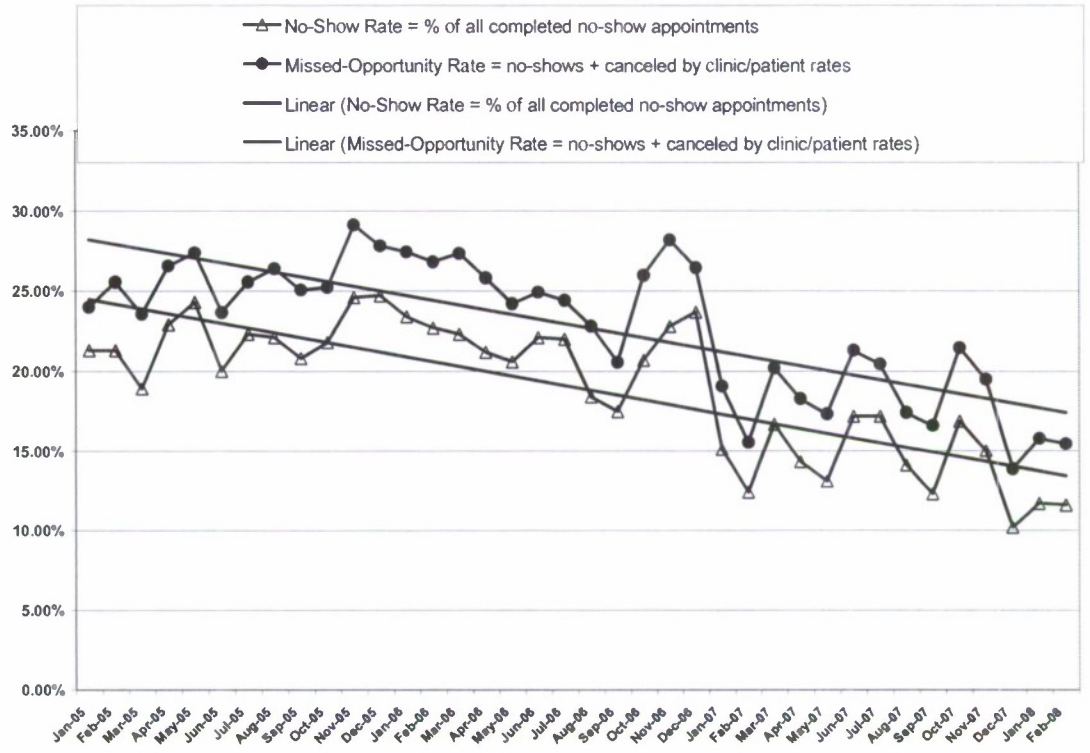
Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A7. Podiatry Clinic No-Show Rate and Missed-Opportunity Rate



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

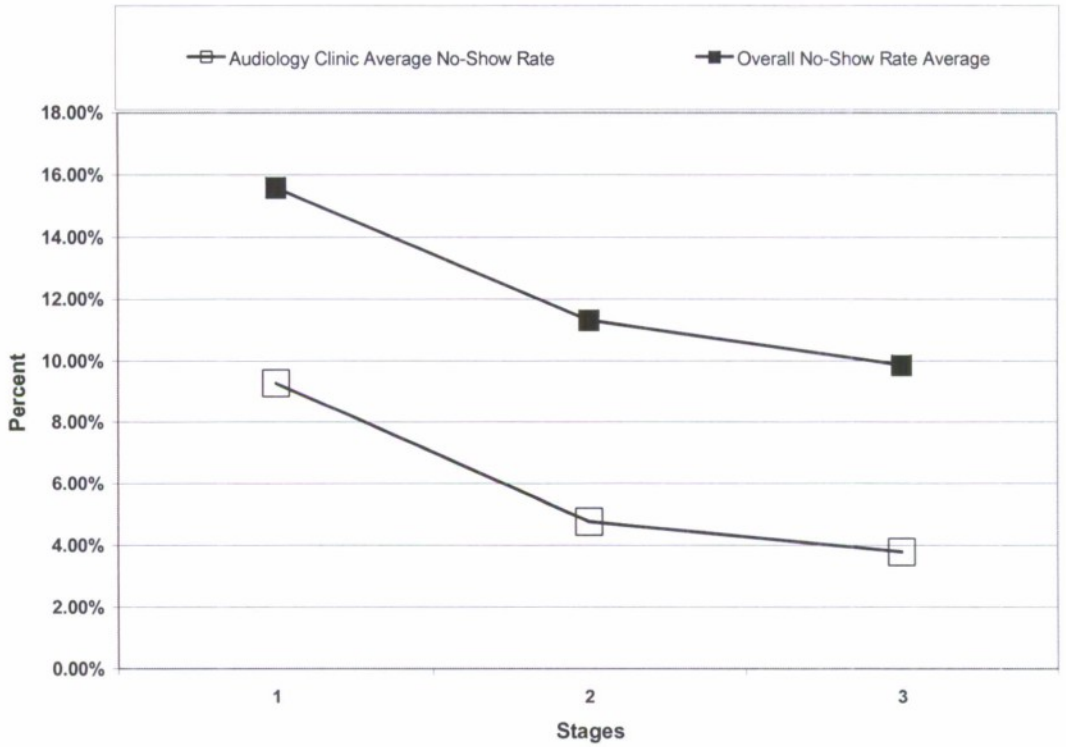
Figure A8. Primary Care Clinic No-Show Rate and Missed-Opportunity Rate



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008. No-Show Rate = % of all completed no-show appointments; Missed-Opportunity Rate = no-shows plus cancelled by clinic/patient rates.

Figure A9. Urology Clinic No-Show Rate and Missed-Opportunity Rate

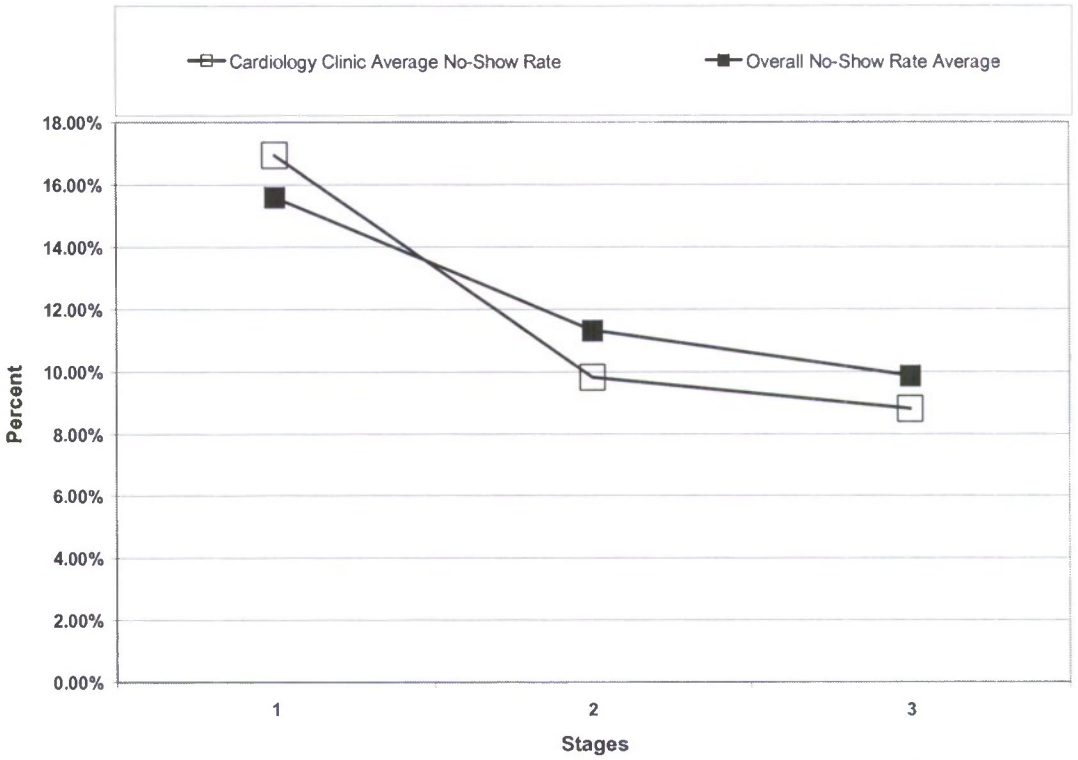
Appendix B: Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

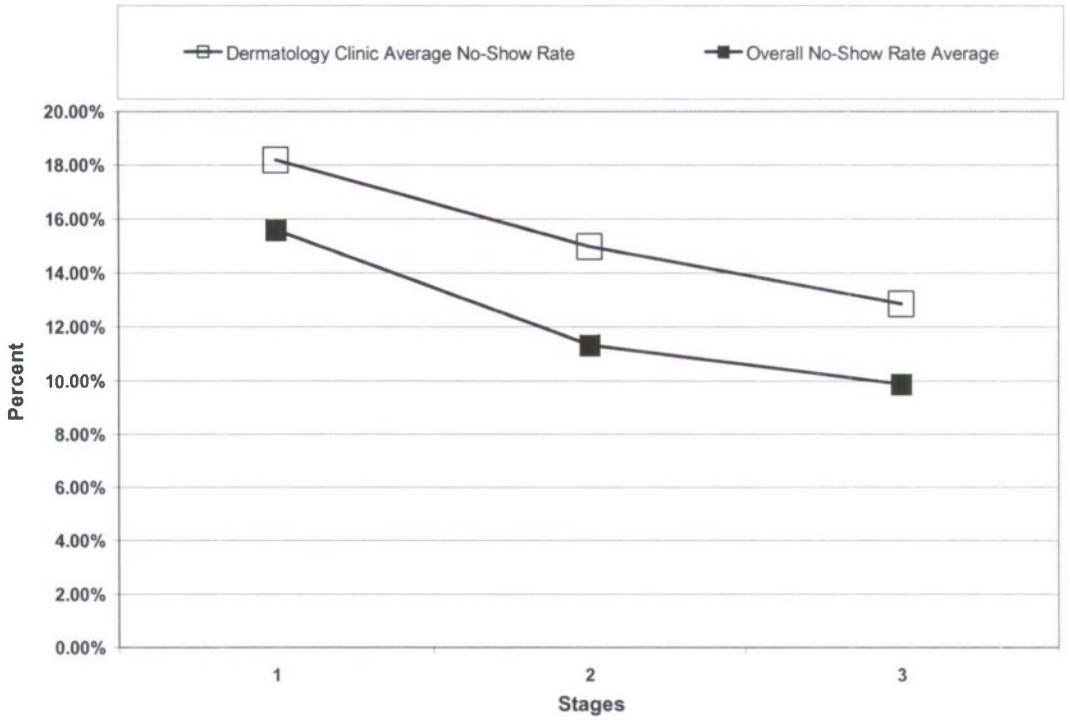
Figure B1. Audiology Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

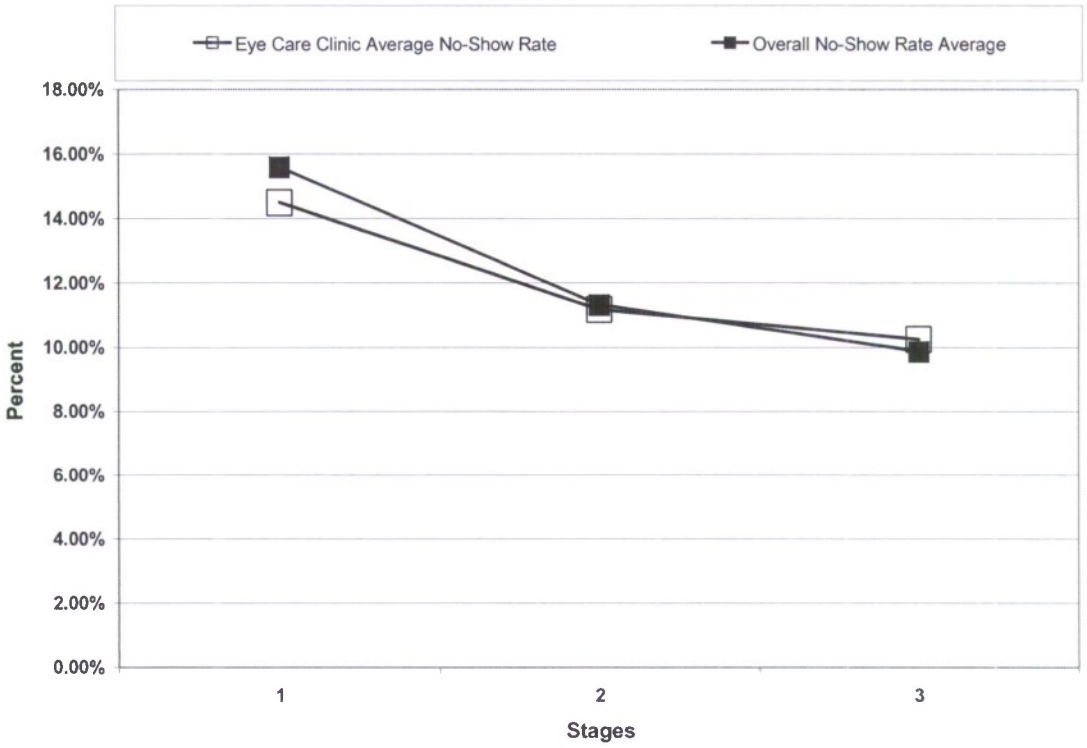
Figure B2. Cardiology Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

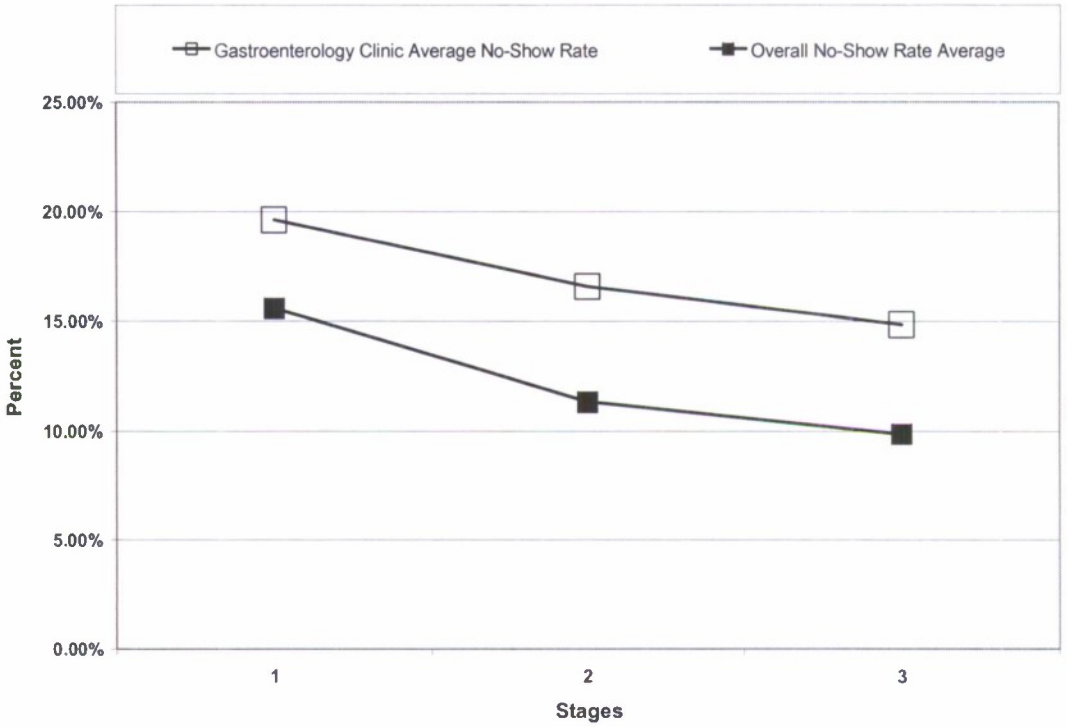
Figure B3. Dermatology Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

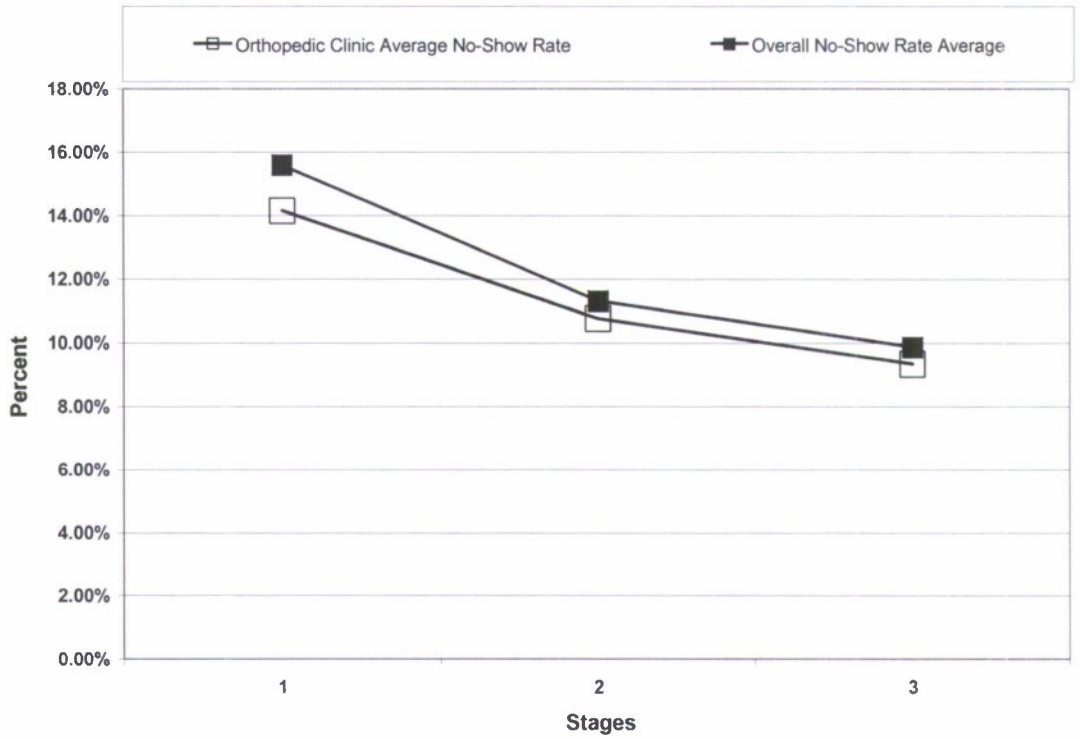
Figure B4. Eye Care Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

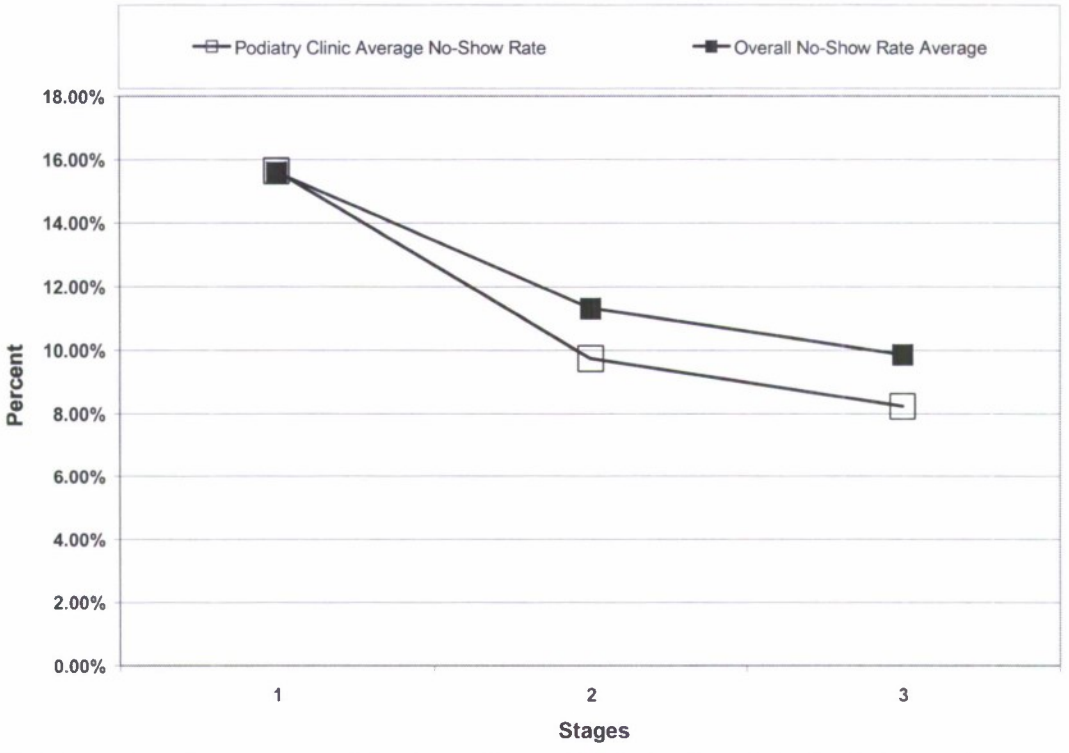
Figure B5. Gastroenterology Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

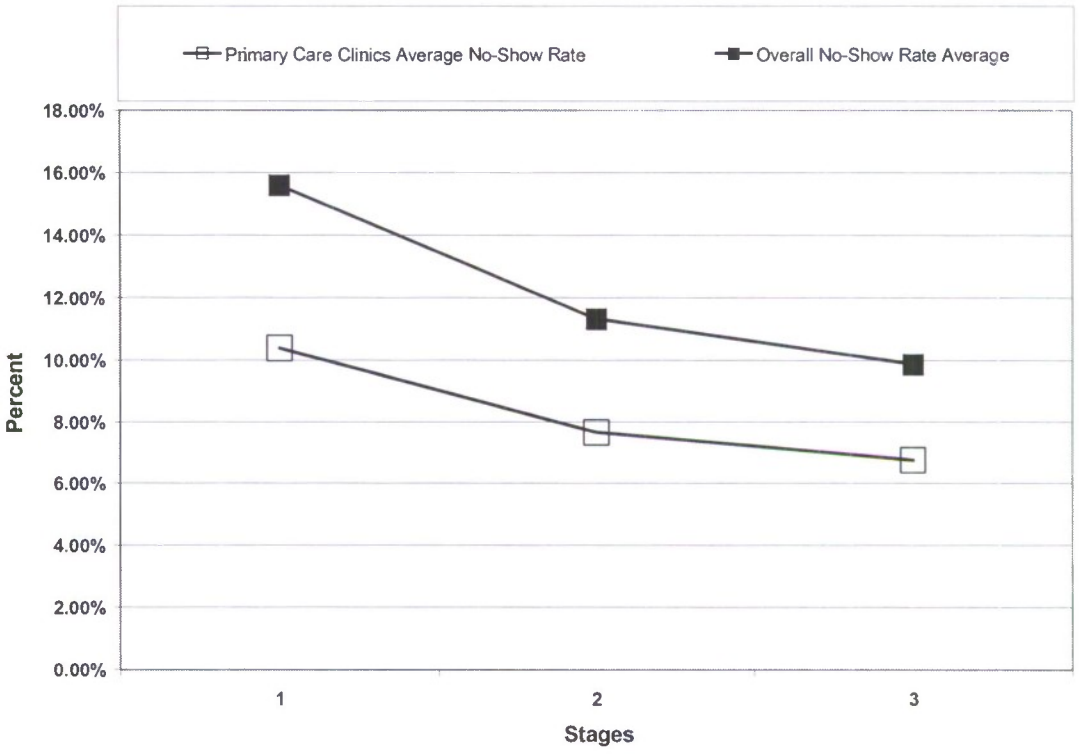
Figure B6. Orthopedics Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

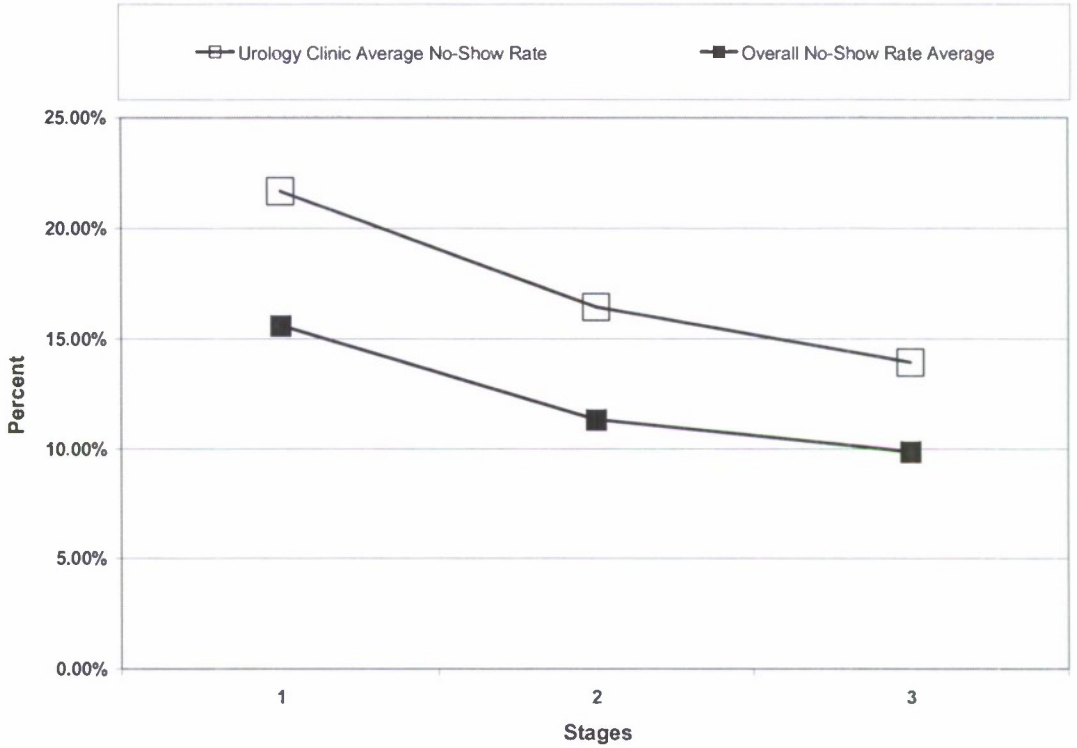
Figure B7. Podiatry Clinic Average No-Show Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

Figure B8. Primary Care Clinic Average No-Show Rates

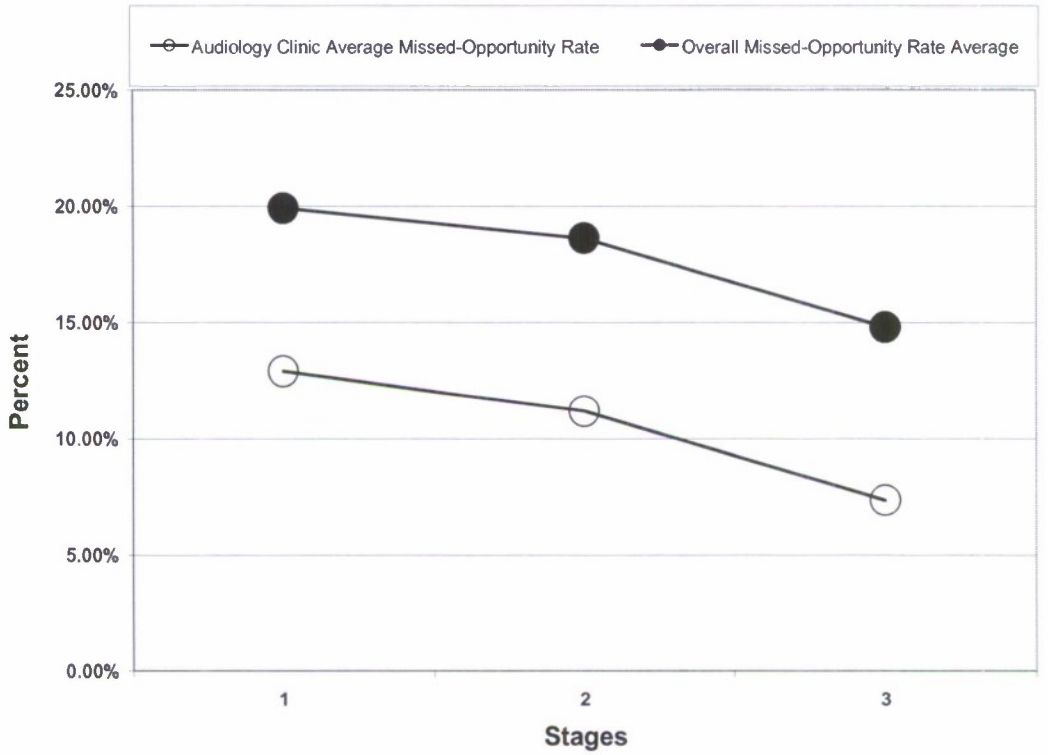


Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

No-Show Rate = % of all completed no-show appointments

Figure B9. Urology Clinic Average No-Show Rates

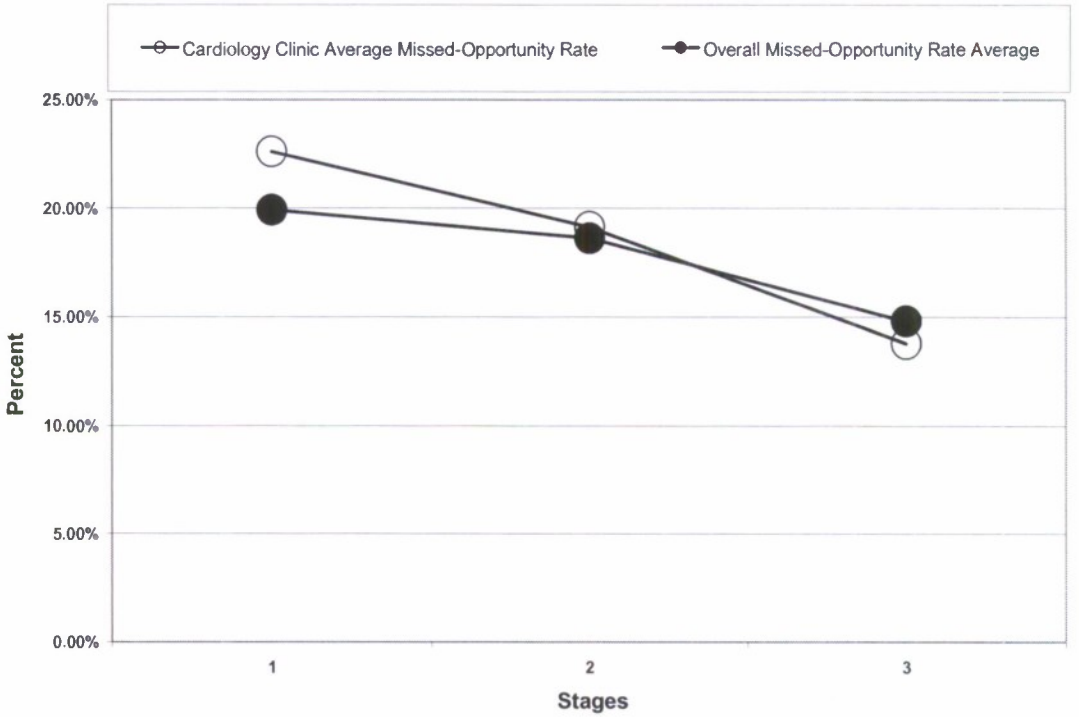
Appendix C: Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

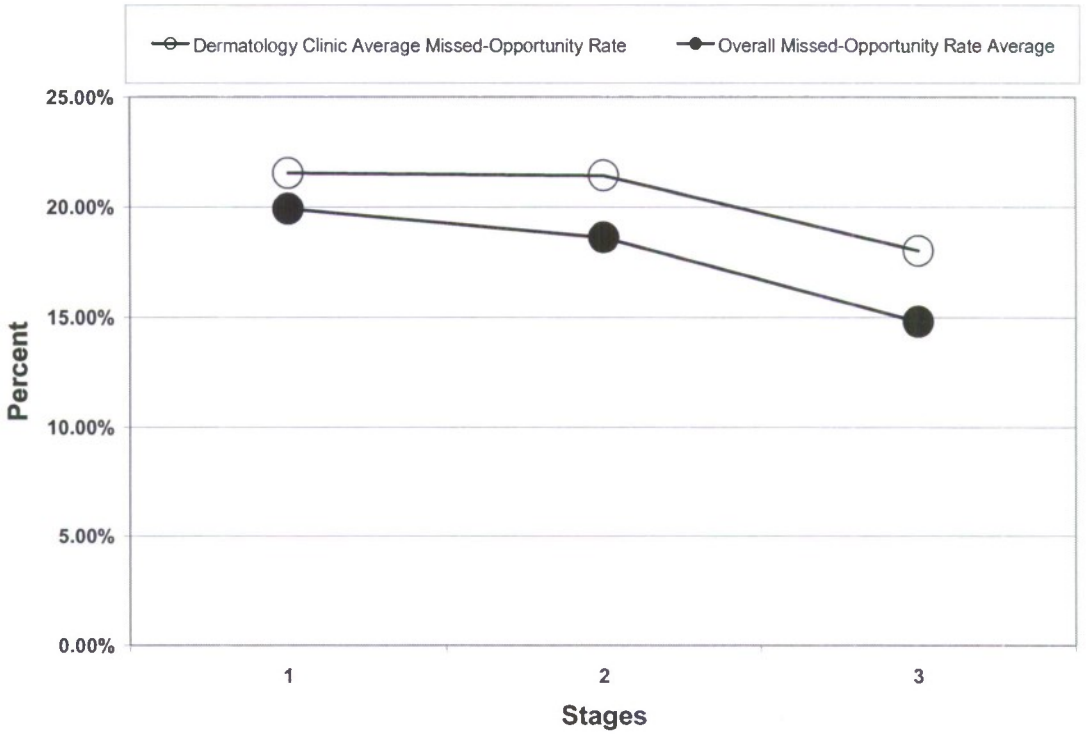
Figure C1. Audiology Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

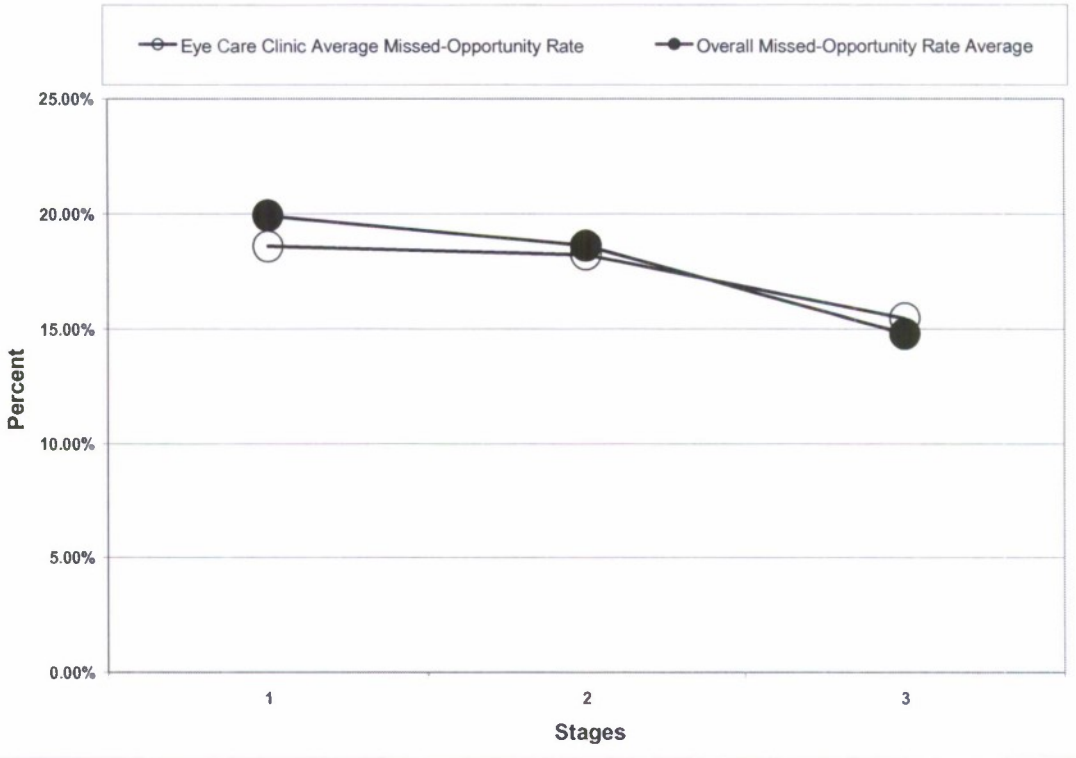
Figure C2. Cardiology Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

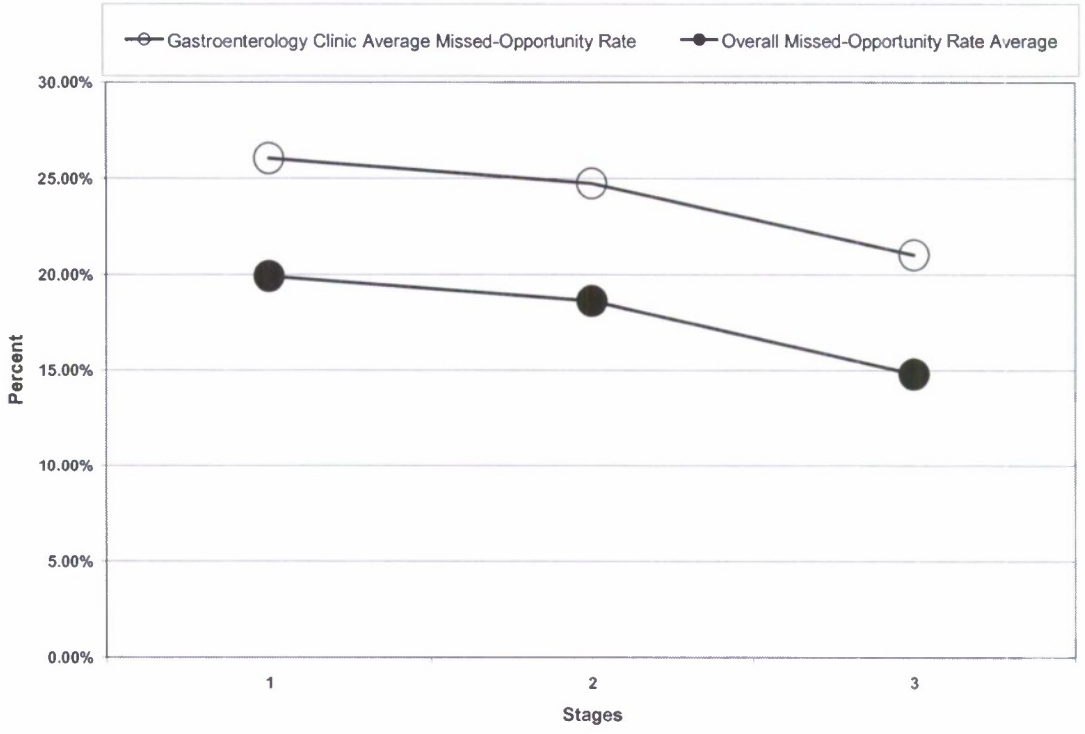
Figure C3. Dermatology Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

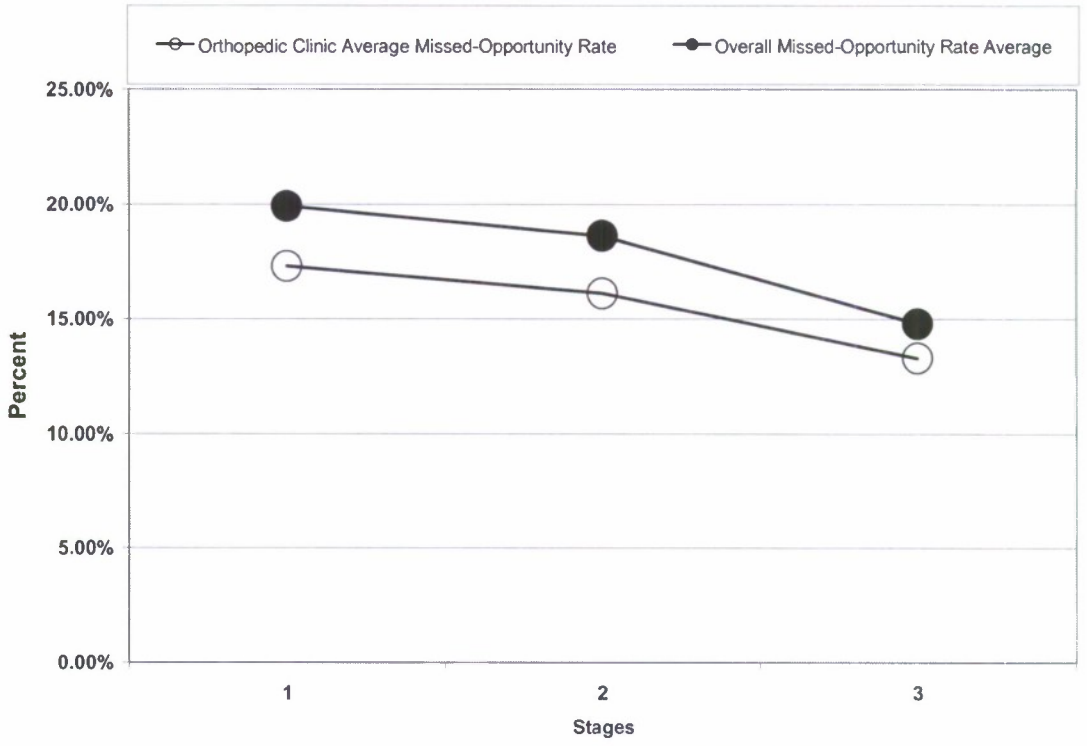
Figure C4. Eye Care Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

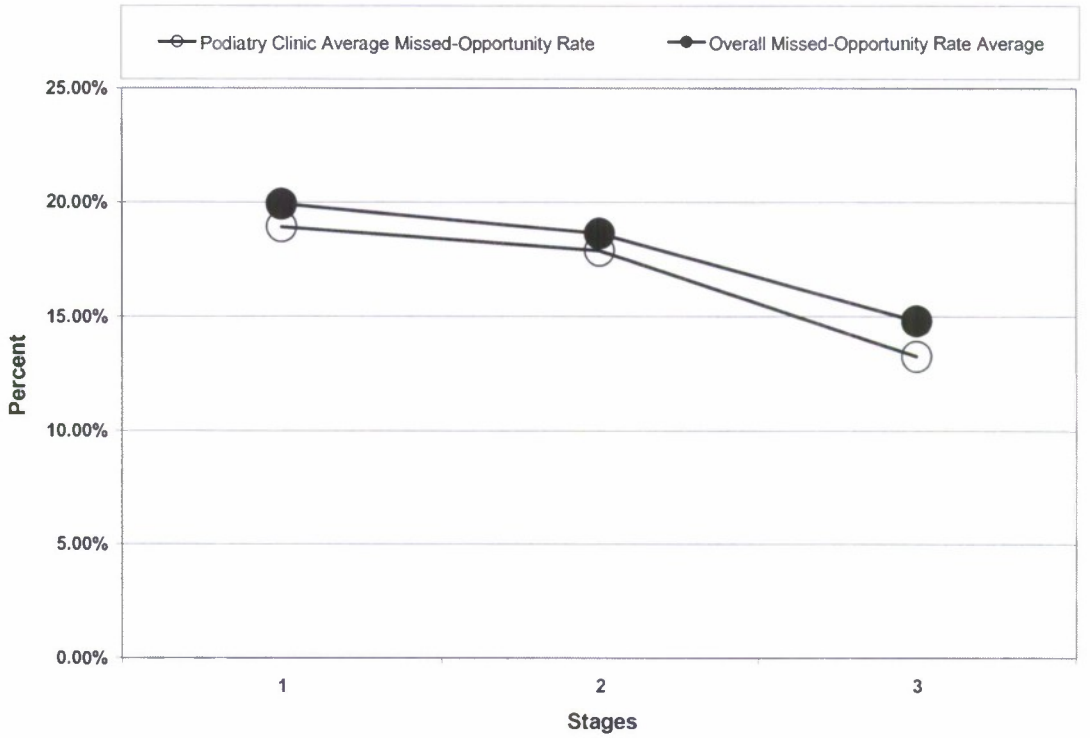
Figure C5. Gastroenterology Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

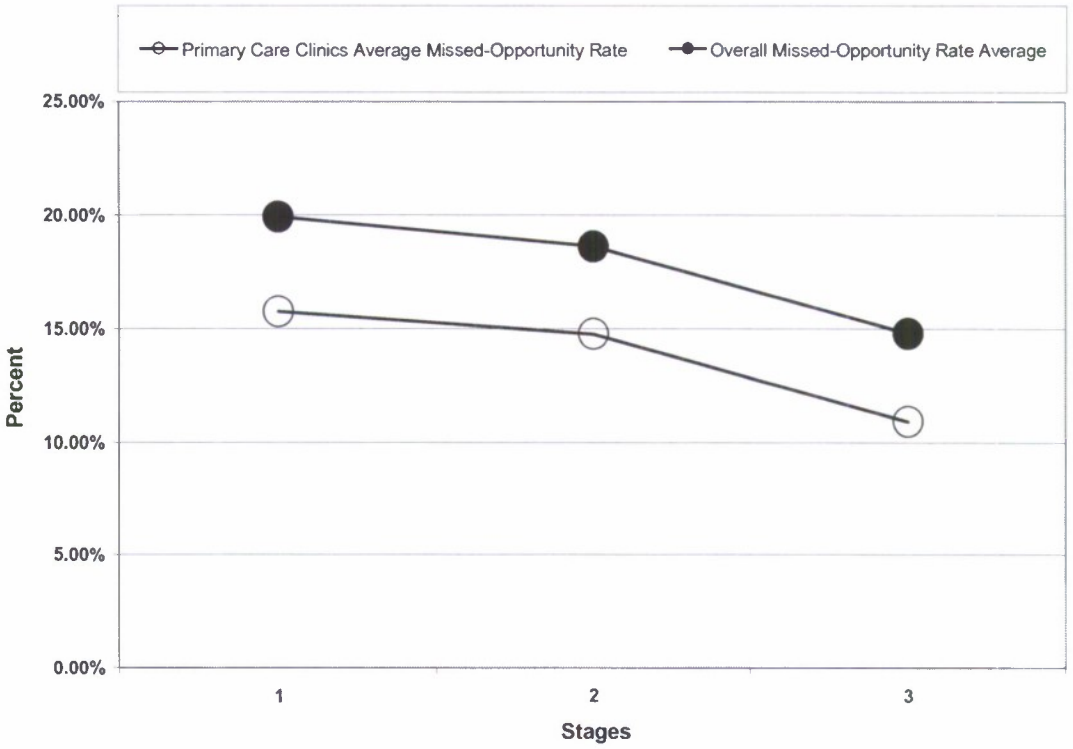
Figure C6. Orthopedics Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

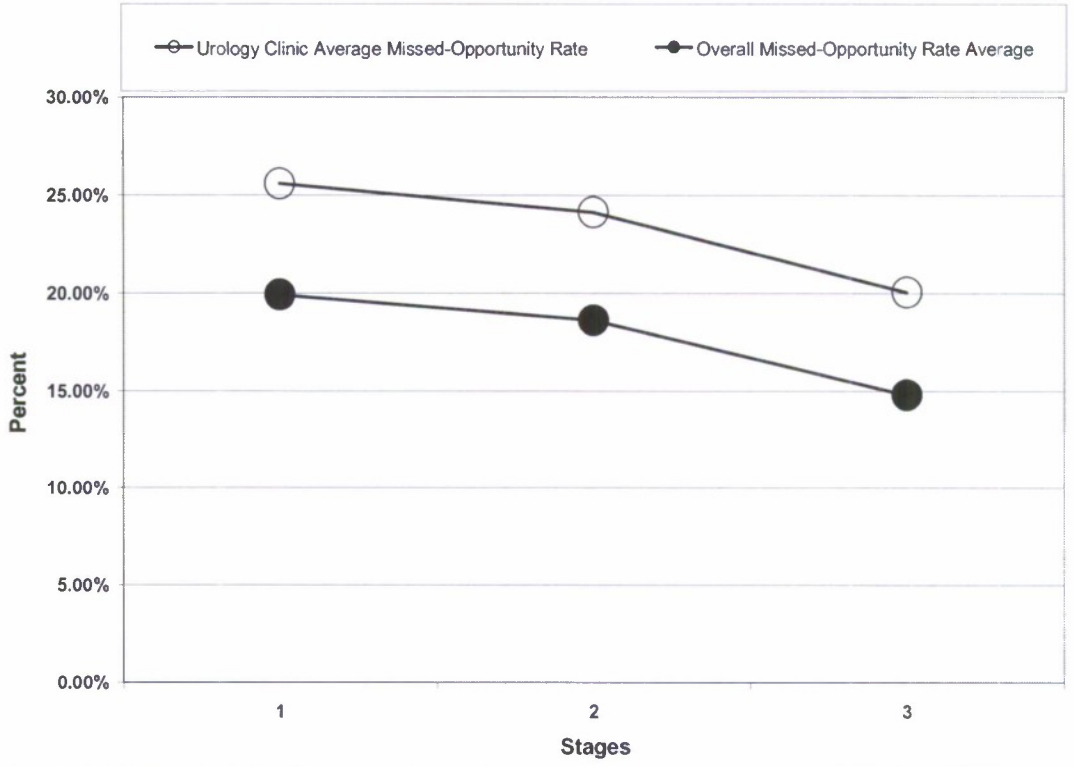
Figure C7. Podiatry Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

Figure C8. Primary Care Clinic Average Missed-Opportunity Rates



Note. Stage 1 = January 2005 – October 2006; Stage 2 = November 2006 – March 2007; Stage 3 = May 2007 – February 2008.

Missed-Opportunity Rate = No-shows plus cancelled by clinic/patient rates.

Figure C9. Urology Clinic Average Missed-Opportunity Rates